The Times and Register.

Vol. XXVI. No. 18. PHILADELPHIA, MAY 6, 1893. Whole No. 765.

Original Articles.

AMPUTATION AT HIP-JOINT.[1]

ENCYSTED CARTILAGINOUS TUMOR NEAR SUBCLAVIAN VESSELS; OPERATION ON THE FIFTH NERVE.

By JOHN B. DEAVER, M. D.

MR. PRESIDENT and Fellows of the Academy: I will first present a case of amputation at the hip-joint, done for osteomyelitis of the femur. At the time of the operation the patient was very much depressed from sepsis, consequent upon prolonged suppuration. The only point of interest in the case from an operative point of view is that during the amputation hemorrhage was controlled simply by an Esmarch tube applied round the thigh, above the trochanter and along the crease of the groin, being retained here by two pieces of bandage, one passed beneath the tube in front and the other beneath the tube behind, each of which was held by an assistant. An oval flap of skin and fascia was made and the muscles divided down to the bone by a circular sweep of the knife. The superficial and deep femoral arteries, with their accompanying veins, were next tied separately, as well as those of the muscular branches which could be recognized. The tube was next loosened a little, and the small vessels, as they bled, caught with hæmostats. The tube was now removed, and an incision carried from the external angle of the wound up over the trochanter and into the joint dividing the capsular ligament, when the muscles were carefully separated from the bone and disarticulation completed. The amount of blood lost, I do not think, amounted to more than two ounces. The advantage this procedure offers over the Wyeth method is in not dividing the femur before the disarticulation is made, and further, that the amount of blood lost is not any greater, and that the vessels not being constricted for so long a time, there is less likelihood of consecutive bleeding. The tumor I here present is one of sarcoma, removed from the side of the neck, which had its origin from the periosteum of the vertebræ. The symptoms presented by the patient were those of laryngeal obstruction, paroxysmal in character and attended by the expectoration of large quantities of mucus. The symptoms of obstruction were not caused by pressure inflicted upon the larynx or trachea, but from involvement of the laryngeal nerves. Before the operation was performed I very much questioned if the removal of the growth would suffice to relieve the obstruction which was

[1] Read before the Philadelphia Academy of Surgery, at the meeting of March 6, 1893, the President, Dr. William Hunt, in the chair.

afterward proven by the same symptoms continuing until death twenty-four hours thereafter. The dissection was not a very difficult one, as the mass lay behind the large vessels, the pulsation of which was scarcely perceptible. The great amount of infiltration around the vessels must by necessity have involved the laryngeal nerves as well.

The second specimen is one of cyst, in the wall of which is a circular piece of cartilage. It was removed from the subclavian region of a man who was injured at the battle of Appomattox, April 9, 1865. When the accident occurred he was standing under a tree. He was not able to say, definitely, whether the injury resulted from being struck by a piece of shell or by a piece of wood from the tree. The only noticeable trouble at the time of the accident was fracture of the clavicle. From that time to the present a sinus has existed in the neck which patient states has been operated on without success. He was referred to me by Dr. Hildenbrand, when, upon examination, the orifice of the sinus was plainly to be seen, immediately above the inner end of the left clavicle, from which was escaping a purulent discharge and through which, upon the introduction of a probe, could be felt, what was believed, most probably, to be dead bone. Examination with the fingers demonstrated the presence of a partly movable mass which was thought to be a detached piece of the clavicle which had undergone necrosis. Operation revealed the presence of this cyst; it was attached to the sheath of the subclavian vessels and to the pleura. Examination of the clavicle through the wound showed no trouble other than a slight enlargement at the seat of the original fracture. Examination of the cyst wall demonstrated very clearly the presence of cartilage.

T. M., aged fifty-eight years, white, Irish, slate-roofer, from a child had been very nervous, the slightest excitement or undue exertion throwing him into paroxysms of nervousness. When twenty-eight years of age, had an attack of smallpox which was followed by a weeping sore over the right inferior maxilla. This continued to discharge for six years, when it healed. Immediately after the healing of the sore he was attacked with neuralgic pains which were referred along the course of the inferior dental nerve. This pain continued at irregular intervals for six years, when he consulted a surgeon, who was supposed to have removed a section of the nerve near the dental foramen. Very little, if any relief followed this operation, when a second was performed by the same surgeon one year later; this was followed by relief for one year, when he had another attack of the pain. He now came under my care. I trephined the inferior maxilla over the angle and removed a section of the inferior dental nerve. This was followed by relief for a period of fifteen months, when the pain again returned. I now opened up the field of the old operation, exposed the proximal end (stump) of the nerve, excised a part therefrom, chiselled away the roof of the remaining portion of the dental canal, and removed the distal portion of the nerve as far as the mental foramen. This was followed by relief for sixteen months, when the pain returned, being referred, in addition to along the course of the inferior dental, along the side of the tongue. I now simply cleared out the field of the old operation, but this was not followed by any marked relief. I again operated, this time taking out a vertical section of the ramus of the jaw as far as the sigmoid cavity, and removed a further section from the proximal end of the inferior dental, and at the same time a section from the gustatory nerve. This was followed by relief. I purposely refrained from taking a section from the inferior maxillary nerve immediately after it passes through the foramen ovale, also from performing an intracranial operation, as I am not as yet, by any means, convinced that these more radical procedures are warrantable until the milder ones have been done without success. I can recall a number of cases, both of neuralgia of the inferior as well as of the superior maxillary nerve; where I have followed this course in relapsing attacks, with satisfactory results, to convince me that a longer period of relief from pain is offered the patient than would result, perhaps, by the more radical operations, removal of the Gasserian ganglion, etc., in the light of the present statistics.

DISCUSSION.

Dr. John B. Roberts: Twice I have had occasion to remove large malignant growths from the neck, and in both cases the result was the same as in Dr. Deaver's case. In one case, a child, I had to tie the internal carotid artery, and the child died on the second day with symptoms of brain implication. The other case was that of a man with a deep tumor requiring ligation, either of the internal jugular vein or of a large branch close up to the vein, I now forget which. I thought that he was going to to get well, but he died on the fourth or fifth day with symptoms, the origin of which I could not determine. The wound was aseptic and nearly healed. He was found to be breathing very rapidly, and sank in a few hours in a sort of collapse. I could not tell whether there was implication of deeper organs or heart clot. No autopsy could be obtained.

Dr. J. Ewing Mears: In the case which I reported and to which reference has been made by Dr. Deaver, I removed two and one-half inches of nerve and submitted it to Dr. De Schweinitz for examination, and the condition found was that of fatty degeneration. It is important, it seems to me, that our studies should be directed toward ascertaining, if possible, what the pathological condition is in these cases of trifacial neuralgia. I think that all of us have come to the conclusion that operative procedures appear in most cases, to be hopeless so far as permanent relief is concerned. It is impossible that from studies in regard to the cause of the condition, we may be able to indicate some method of operation which may prove more successful.

Last spring the members of the American Surgical Association were shown in the Massachusetts General Hospital the results in five or six cases of operations upon the second and third divisions of the fifth nerve for neuralgia. In these cases an incision had been made over the temporal region, the muscle cut through and the zygoma divided. By pressing the tissues down firmly the operator was able to reach the second and third divisions as they emerge from the foramen rotundum and ovale. In these cases the relief had extended, if I remember correctly, over three or four years, and in one case five or six years. From the reports which are given in Boston, this appears to be a very successful operation.

To my mind, the question of interest is in regard to the pathological condition. If the disease is of central origin I do not see how any operation on the peripheral terminations of the nerves can be of service. Repeated operations, such as Dr. Deaver performed, of course, give temporary relief.

Dr. W. W. Keen: I quite agree with Dr. Mears that the question of the pathology is a most important one. In the cases where I have had a microscopical examination made the change has been found to be one of sclerosis. In one case there were spots of distinct hemorrhage into the nerve. These were almost macroscopic. I have never seen the inferior dental nerve so large as in this case. That patient had a return of the pain, and a second operation was done. So far as I could determine, a new nerve had formed, and, strange to say, there was a branch of this nerve which went inward through a foramen on the inner surface of the jaw. I saw no such foramen at the first operation. Dr. Dana some time ago published a paper in which he stated that he had found sclerosis of the vessels rather than of the nerve. However this may be, it seems to me clear that the sclerosis of the vessels or of the nerve is the chief thing and that this is distinctly a senile change. That it does not appear in early life we all know, but only in later life when sclerosis of other organs appear. This being the case, I think that the operation of choice should always be the peripheral operation. I should not think of endeavoring to remove or break up the Gasserian ganglion as a primary operation. I was told the other day that one of Mr. Rose's cases had shown symptoms of return, and this is what might be expected as the sclerosis begins rather in the periphery and works backward. While medicine offers no benefit in the majority of cases, we can, as a rule, assure the patient that an operation will afford at least one or two years of relief. I presume that some of Dr. Deaver's operations consisted simply in reaming out the

connective tissue about the stump of the nerve. This I have done in more than one case, and, although under the microscope no nervous tissue could be found in the material removed, the operation gave as much relief as followed a pure exsection of the nerve. This being the case; it seems to me that we should, as a general rule, endeavor to give relief by such a simple operation, rather than immediately to go to the foramen rotundum or ovale or within the skull and remove the Gasserian ganglion.

I noticed that Dr. Deaver referred to destruction of the ganglion as not a serious operation. I should consider it quite a serious operation, although there have not been a large number of deaths. Rose has done it six or seven times, with one or two deaths. Andrews four times without a death. Hartley once, with recovery, and Dr. Roberts once, with recovery. Besides this, two eyes, and possibly more have been destroyed. It seems to me that any operation involving so much traumatism is to be considered a very serious operation, and should not be undertaken except after the gravest consideration.

Dr. James M. Barton: As has been said by Dr. Mears, we have not yet arrived at the pathology of neuralgia. One suggestion is, that it is due to small aneurisms, which have been found in the diseased nerves. This view is supported by the results of the ligation of the external carotid for this affection. Nussbaum claimed that one-half of the cases are permanently cured.

I can also confirm what has been said by Dr. Keen. The most trifling operation on the nerve, the slightest stretching, even the division of the distal branches is apt to afford temporary relief, and the most serious operation will not do much more.

So rare, in my experience, is anything like permanent relief, that I exhibited before this Society, a few months ago, as something unusual, a case of neuralgia of the second branch, of thirteen years' duration in which I removed the nerve at the foramen rotundum, and where the relief had continued for five years. The man is still free from the disease.

Dr. Thomas G. Morton: I am at present attending a patient, who is now eighty-two years of age, on whom I operated some twenty years ago. After the excision he had entire relief for many years; then had a recurrence of pain, brought on apparently by a ride of five miles in a wagon which had no springs, in which he was severely jolted.

For the last ten or fifteen years, although enjoying, indeed, robust health, he has at times suffered intensely, and then, again, having entire immunity from pain. Now the suffering is only relieved by morphine injections. Swallowing, talking, any movement of the tongue, touching the skin of the face, or even the beard, provokes "thrusts of pain."

In another case—now more than twenty years since the operation—the patient has had entire freedom from pain. As a rule, sooner or later pain reappears; but in such cases there is no reason why the operation should not be repeated. Benefit is generally experienced from each operation, and for even a measure of relief patients are willing to submit to any treatment.

THE REPORT OF A CASE OF FRACTURE OF THE THYROID CARTILAGE.[1]

By WILLIAM J. TAYLOR, M. D.

[Surgeon to St. Agnes' Hospital; Assistant Surgeon to the Orthopœdic Hospital and Infirmary for Nervous Diseases, Philadelphia.]

CHARLES E., aged forty-three years, a carpenter, was admitted to the surgical ward of St. Agnes' Hospital on October 6, 1892, in a semi-conscious condition. He was unable to give an account of the accident, but a fellow workman reported that he had fallen a distance of about twenty feet, from a scaffold upon which he had been working. No one saw him fall but when he was discovered he was unconscious, and lying across a heavy piece of wood. When admitted into the hospital; a short time afterward, he was unconscious, could be roused from his stupor, but could give no account of himself. He was very much shocked. The right side of his face was badly contused, the right eye swollen and completely closed. He was

[1] Read before the Philadelphia Academy of Surgery, at the meeting of March 6, 1893, the President, Dr. Willlam Hunt, in the chair.

bleeding from the nose, mouth, and left ear, and his general appearance was that of a man suffering from a fracture of the base of the skull. The pupils were equal, and a very careful examination showed this diagnosis to be an error. He had great difficulty in breathing, could not swallow, the saliva ran out of the corners of his mouth, and when he attempted to speak his voice was husky and his articulation very indistinct; he could not speak above a whisper, and only that with the greatest pain and difficulty. There was little or no swelling of the neck, but when he regained complete consciousness he complained of great pain and discomfort in the throat.

A careful examination now revealed a fracture of the thyroid cartilage on the right side, extending from above downward about on a line with the insertion of the thyro-hyoid muscle and about two lines anterior to it. The amount of displacement was very slight, but the mobility of the fragments could be easily demonstrated, and the fragments displaced and replaced again by manipulation with the fingers.

Dr. Smock, the laryngologist to the hospital, very kindly examined him very shortly after his admission; and confirmed the diagnosis of fracture of the thyroid cartilage. He reported also a rupture of the tympanic membrane about at the extremity of the manubrium process of the malleus. The nose showed hemorrhagic points on the septum on both sides.

Dyspnœa was pronounced, but there was apparently no emphysema about the seat of the fracture or in the neck. His symptoms were severe, and the pain and discomfort very great, but I did not think them sufficiently so to demand immediate relief.

Dr. White, the resident surgeon, was instructed to make all preparations for instant tracheotomy, and to send for me if the symptoms should increase in severity. He was to use his own judgment, however, and to operate at once without waiting for me to arrive should the necessity arrive. No attempt whatever was made to apply a dressing. For some days the bleeding from the mouth persisted, and the difficulty in swallowing and dyspnœa continued, but gradually lessened, and by the end of three weeks was entirely gone. His voice still remained somewhat husky, but there was no longer pain or difficulty in swallowing. The left ear was treated by cleaning out the auditory canal with cotton, and insufflating daily aristol and boric acid.

MULTIPLE FRACTURE OF BOTH UPPER EXTREMITIES.[1]

By WILLIAM J. TAYLOR, M. D.

[Surgeon to St. Agnes' Hospital; Assistant to the Orthopœdic Hospital and Infirmary for Nervous Diseases, Philadelphia.]

MARGARET C., aged fifty-six, a widow, and by occupation a monthly nurse, was admitted to my ward at St. Agnes' Hospital on the evening of October 19, 1892 suffering from the most remarkable number of fractures, considering the amount of constitutional disturbance, it has ever been my fortune to see. She was going down the cellar stairway in the dark when she missed her footing and fell to the bottom, some eight or ten steps. From the nature of the injuries she must have put out her hands before her in the hope of breaking the fall.

She was unconscious for a short time, and was then brought to the hospital in a patrol wagon, but recovered sufficiently to walk from the wagon into the receiving ward.

Upon examination it was found that she had received a lacerated wound of the scalp, six inches long and extending down to the bone, and a deep lacerated wound of the lower lip about two inches in length. There was a fracture of the surgical neck of the left humerus and an oblique fracture of the middle one-third of its shaft; a contusion of the left elbow and a fracture of the lower end of both the radius and ulna of the same side. There was a supra-condyloid fracture of the right humerus extending into the elbow-joint, forming a T. A fracture of the upper third of the radius and of the ulna, and a fracture of the lower end of the radius. In spite of this great number of fractures and of the serious lacerated wounds she was able to walk into the hospital, and seemed to suffer compara-

[1] Read before the Philadelphia Academy of Surgery, at the meeting of March 6, 1893, the President, Dr. William Hunt, in the chair.

tively little pain. Her temperature was normal, her pulse good, and there was no evidence of shock such as would have been expected from the nature of her injuries

There was much difficulty experienced in adjusting and holding in place the different fractures, but with care and patience and plenty of plaster-of-Paris this was accomplished. Her recovery has been most satisfactory, and she has for all practical purposes full use of both arms.

Such an extensive number of fractures led me to suppose there must have been some serious lesion of the bones, but the most careful inquiries failed to give me any clue to such a state of affairs. She was a large, strong, and, apparently, perfectly healthy woman. She had never before had a fracture of a single bone, neither was there any history of fracture in any member of her family. She was borne in Ireland, and had lived there until a few years ago, and had always been in good health and a hard worker.

DISCUSSION.

Dr. H. R. Wharton: Some years ago the President investigated the subject of fracture of the larynx and proved that tracheotomy was indicated, and that patients usually did better after this operation.

I would ask the experience of members in regard to multiple fractures, whether they have found much constitutional disturbance or many cases of sudden death following multiple fracture. My own experience has been that generally patients do well. Last summer I had under treatment a boy six years old, who had fallen off of one of the tunnels of the B. & O. R. R., and sustained a compound fracture of the nose, fracture of both bones of each forearm, and fracture of both thighs about the middle of the shaft. The patient did perfectly well with normal temperature for a week. He was doing well when I saw him at 12 o'clock. In the evening of the same day the resident noticed that his breathing was peculiar, and an hour afteward the patient was moribund. He died of some cerebral complication. I thought that it might be a case of fat embolism which is said to follow fractures. I have seen another patient die very much in the same way with a simple fracture of the femur. No post-mortem was made in either case.

The President: The conclusion of the paper which I wrote on fracture of the thyroid cartilage was that where emphysema and bloody sputa were present there had been up to that time no recovery where tracheotomy had not been performed. I thought that tracheotomy should be done when the first symptoms were discovered. I found several cases similar to that reported by Dr. Taylor in which recovery followed without tracheotomy.

Dr. Thomas G. Morton: Some years ago I saw in consultation a lady, eighty-four years of age, who had gradually, during ten years, lost her vision from cataracts. Soon after this she sustained in a fall a fracture of both bones of the forearm, the humerus about the middle and the shaft of the femur near the great trochanter. Complete recovery from these injuries following showed such an excellent repair, that six months afterward I operated upon both eyes at the same sitting. Perfect vision followed in each, which continued until her death in her ninety-seventh year.

METATARSALGIA (MORTON'S PAINFUL AFFECTION OF THE FOOT), WITH AN ACCOUNT OF SIX CASES CURED BY OPERATION.[1]

By THOMAS S. K. MORTON, M. D.
[Professor of Surgery in the Philadelphia Polyclinic, etc.]

THE affection that has come to be best known as "Morton's Painful Affection of the Foot," or "Morton's Toe," was first described and a method of certain cure presented by Dr. Thomas G. Morton, of Philadelphia, in 1876, under the title of "A Peculiar Painful Affection of the Fourth Metatarso-phalangeal Articulation."[2] In subsequent publications[3] he has confirmed his views rela-

[1] Read before the Philadelphia Academy of Surgery, at the meeting of March 6, 1893, the President, Dr. William Hunt, in the chair.

[2] American Journal Medical Sciences, January, 1876.

[3] Surgery in the Pennsylvania Hospital, 1880, p. 107. Philadelphia Medical Times, October 2, 1886.

tive to cause and treatment, and reported large numbers of cases.

The disease under consideration may be described as a painful affection of the plantar digital nerves, directly caused by pressure upon or pinching of them by certain portions of the metatarso-phalangeal articulations—especially the fourth.

The reason for the fourth toe being the almost invariable seat of origin of the train of painful and neurotic symptoms to be described is ascribed to anatomical causes by Morton in the following language:

"The occurrence of neuralgia may be understood by a reference to the anatomy of the parts. The metatarso-phalangeal joints of the first, second, and third toes are found on almost a direct line with each other, while the head of the fourth metatarsal is from one-eighth to one-fourth of an inch behind the head of the third, and the head of the fifth is from three-eighths to half of an inch behind the head of the fourth; the joint of the third, therefore, is slightly in advance of the joint of the fourth, and the joint of the fifth is considerably behind the joint of the fourth.

"The fifth metatarsal joint is so much posterior to the fourth that the base of the first phalanx of the little toe is brought on a line with the head and neck of the fourth metatarsal, the head of the fifth metatarsal being opposed to the neck of the fourth.

"On account of the character of the peculiar tarsal articulation, there is very slight lateral motion in the first three metatarsal bones. The fourth has greater mobility, the fifth still more than the fourth, and in this respect it resembles the fifth metacarpal. Lateral pressure brings the head of the fifth metatarsal and the phalanx of the little toe into direct contact with the *head and neck of the fourth metatarsal*, and to some extent the extremity of the fifth metatarsal rolls above and under the fourth metatarsal.

"The mechanism of the affection now becomes apparent when we consider the nerve-supply of the parts. The branches of the external plantar nerve are fully distributed to the little toe and to the outer side of the fourth; there are also numerous branches of this nerve deeply lodged in between these toes, and they are liable not only to be unduly compressed, but pinched by a sudden twist of the anterior part of the foot. Any foot movement which may suddenly displace the toes, when confined in a shoe, may induce an attack of this neuralgia. In some cases no abnormality or other specific cause for the disease has been detected."

This explanation undoubtedly will account for the great majority of cases, and perhaps all could be ascribed to pinching of the nerves between the metacarpo-phalangeal articulation. Yet there have been reported a few cases where the transverse metatarsal ligament has appeared to be lax or ruptured, thus permitting the metatarsal heads to descend upon the nerves. Auguste-Poullosson, of Lyons, in 1889,[1] after reporting a typical case, says that "the cause of the affection is evidently a certain laxity of the traverse metatarsal ligament, which permits partial infraction of the arch formed by the heads of the five metatarsal bones, one of the middle ones, probably the third, becoming dislocated downward and compressing the nerves running along each side of it against the heads of the neighboring bones."

L. G. Guthrie[2], in writing of metatarsal neuralgia, states his belief that "under the influence of prolonged standing or walking in tight boots, the ligaments of one or more joints, metatarso-phalangeal or phalangeal only, become strained, slight sublaxation takes place, the nerves are stretched and pressed upon by the partially dislocated bones, and the characteristic pain is produced."

In reference to the supposed dislocations above mentioned, Morton says:

"The dislocation referred to is not a true dislocation, but is simply a twist of the toe, and a violent spasmodic condition of the muscles of the toe incident to the intense pain, simulating a dislocation, which, when the toe is compressed laterally and in its rolling between the third and fifth suddenly, presses upon and pinches the underlying plantar-nerve branch."

Edward F. Grün[3], himself a sufferer

[1] Lancet, March 2, 1889, p. 346.
[2] "On a Form of Painful Toe," Lancet, 1892, vol. i. p. 628.
[3] Lancet, April 6, 1889, p. 707.

from the affection, believes that the pain results from descent of the tarsal arch, which is accompanied by lengthening of the foot and spreading to the outer side, so that "where the weight comes on the member the foot spreads inordinately; the boot is not constructed to allow for so much spreading, and a frightful cramping pain is the result, causing the patient to remove the boot without regard to place or circumstances—often the most inconvenient."

E. H. Bradford[1] states that the results of treatment in these cases, as well as the symptoms and localization of the point of severest pain, make him agree with Morton, in believing the affection to be originated by pinching of the metatarsal nerve, rather than to flattening of the tarsal arch, as suggested by Poullosson. In none of his thirteen cases was any degree of flat-foot present.

In a large number of cases seen by me, in addition to those herein reported, it has not been possible to demonstrate any laxity of the metatarsal ligaments, and, while in a few the pain was referred to other of the metatarso-phalangeal joints than the fourth, yet upon careful manipulation it was always found that the pain was reflected from the fourth to the other joints. It must be conceded, of course, that laxity or rupture of the transverse ligament would predispose to injury of the nerves at the fourth joint by permitting greater motion of the overlapping bony points in that situation. However, while the exact etiology of the affection is of great scientific interest, clinically it is of small account, as excision of the fourth metatarso-phalangeal articulation, as originally proposed by Morton, or amputation of the fourth toe, including the corresponding metatarsal head, invariably has secured an absolute and permanent cure. No dissections of the diseased regions have yet been possible, nor have the nerves been in any case excised so that microscopical examination could be made. I have carefully examined a number of the joints that have been removed for the cure of the affection, and in no instance have been able to prove any anomaly or disease.

[1] "Metatarsal Neuralgia, or Morton's Affection of the Foot." Boston Med. and Surg. Journal, 1891, vol. ii. p. 52.

Metatarsalgia is, in its lesser degrees, a very common disease. Almost every one has suffered more or less, at times, from neuralgic twinges radiating from the joint in question. These mild cases occasionally develop into the more severe forms. In them occasional attacks of pain are often followed by periods of complete immunity.

Morton made extended inquires among retail shoe dealers and found "that this peculiar condition had not only been frequently recognized by them, but that it is also considered to be quite common. Almost every intelligent shoe retailer has seen a number of persons to whom this disease has been a source of frequent suffering, and who believe their malady to be beyond relief by medical art; indeed it would seem that in some of the most severe of the cases it has been found impossible to obtain the serious consideration of their condition by their medical attendants."

So recently as 1891 Bradford[1] has written:

"It is somewhat singular that an affection that is not infrequent in these days of thorough investigation of all ailments, should have attracted but little attention, either in the reseaches of surgeons or of neurologists. The cases are so usually classed among the ill-defined hysterical or nervous affections, and not thoroughly investigated; or they are deemed to be gouty, as in the minds of many practitioners, are frequently all affections of the toes."

The disease has not been observed before adolescence. Women are certainly more predisposed than are men, and its occurrence in the former sex I should judge to be almost twice as frequent as in the latter. One foot is most usually involved, especially in these cases apparently taking origin from an injury. But very frequently one foot is affected to an almost unbearable degree, while its fellow is but slightly involved. Neither right nor left foot appears to be most liable to involvement unless one or the other is constantly subjected to a motion, as in running certain sewing machines, looms, lathes, etc., while the other is not employed. In this case, as in one of my

[1] Loc. cit.

own, the pain developed in the foot so employed. When both feet become simultaneously affected that the cause will often be found in ill-fitting or tight shoes. Middle life is the period at which the disease is most apt to develop or to become severe, The aged are by no means exempt, although in them more purely gouty or neuralgic forms are prone to occur, and persons at any age, so predisposed, appear to be much more liable to the affection—idiopathic or traumatic—than are others.

The influence of heredity is very marked. I know of several families in which a number of persons, mainly confined to the female sex, are similarly affected. It is interesting to note that in these instances some cases have arisen from twists or sprains of the foot, and others apparently idiopathically.

The exciting or immediate cause of metatarsalgia is usually excessive or unusual exercise of the feet while confined in new, tight, or ill-fitting shoes, as in walking over rough surfaces (mountain-climbing), dancing, playing lawn tennis, etc., or in changing from a firm-soled shoe to one that permits great motion of the metatarsal arch. When the heads of the metatarsal bones are rigidly held in contact by a tight shoe it is reasonable to believe that a very slight twist or wrench of the foot would bring great pressure to bear upon the sensitive branches of the digital nerve distributed upon and about them, and, particularly in those predisposed thereto, bring about a neuralgic and even neuritic condition. This once set up, and the nerves having become sensitive, swollen, or inflamed, ever so slight repetitions of the pressure or bruising are capable of originating the most agonizing suffering. Later, continuous or frequently recurring attacks of this pain, or actual ascent of neuritis, commence reflex contractions and other neurotic complications, perhaps of the gravest type, as witness in Case I. of my series, where the patient had become bed-ridden and severely neurasthenic.

So far as relates to symptomatology, I shall depend upon quoting a few more or less typical cases from the literature of the subject and upon the histories of my own operative cases; but may here mention that I regard the *imperative necessity of removing the shoe*, regardless of surroundings, when a paroxysm comes on, as a pathognomonic symptom of the disease. It may also be said that no evidence of the disease can usually be felt or seen, except that the parts are often of a bluish tint and cold, from venous stasis, and have a tendency to profuse perspiration.

CASE. I.—Miss I. F. S., aged thirty-one years, teacher, was brought to me by her physician, Dr. George L. Romine, of Lambertville, N. J., in June, 1892.

The following history was elicited: Family history excellent; she had always enjoyed the best of health and strength until the present trouble commenced. In July, 1890, she played lawn tennis for the greater portion of a day, coming down heavily on the balls of the feet many times after which she walked a short distance to her home, and felt greatly fatigued. After resting two hours she attempted to walk, and experienced a "queer sensation" along the outside of the left foot, a feeling "as if something had given way about half way between the toes and heel."

"In the evening I walked down town, but could scarcely return, for it was so hard to make my foot go. I felt as if retarded in some mysterious way. By the time I reached home a line of pain extended from the place above-mentioned all the way to my hip. Thinking I had sprained my foot, I applied the usual remedies. The next morning my foot felt rested, but during a short walk on the street the pain in my foot and limb returned.

"By this time the foot began to swell particularly along the outside, and in a few days had a reddish appearance. After a night's rest the swelling disappeared, and I was able to use my foot, with intervals of rest, in ordinary walking about the house. Each day it gave out after less use, so at the end of five days I called in our family physician, Dr. Romine, of Lambertville."

It was presumed that a ligament or tendon had been ruptured, and fixation by bandages resorted to. On August 7, these dressings were removed.

"The foot and limb were helpless, and the whole side of the foot felt so indescribably bad that it made me faint. A starched dressing was then put on the foot and limb to the knee. For four or five

days following I held my foot on a chair, but after that, during part of the day, on a pillow on the floor. Toward evening I had almost unbearable tingling in the foot, but this passed away on retiring. I never could rest my foot on the outside from the time of the accident without having that unbearable feeling in the feet, and at times the line of pain in the limb.

"At the end of four weeks the doctor told me to stand with my feet even. Never shall I forget what I suffered that day. The limb had shortened so that the heel was about two inches from the floor, and in trying to stretch it down the bottom of the foot pained and tingled dreadfully. I was completely exhausted and deathly sick.

"Crutches were then ordered, and I commenced my hard work of learning to walk.

"My foot was so bad on the side, and a line of dreadful pain extended from about two inches from the fourth toe along the side of the foot and to the knee. After a time the pain in the limb seemed better, but the whole side of the foot felt unspeakably bad. The uncomfortable sensation did not seem confined to any particular place on the side, as it did at first.

"The 1st of October the physician advised my going to school in order to overcome my nervousness, and take my mind from the foot. I wore a worsted slipper.

"The last of October the Doctor commenced the use of a battery every night —the interrupted current being used. The sponge was applied under and over the toes five minutes, five on each side of the heel, and five under the knee. The toes twitched a great deal, and I always dreaded when the sponge neared the fourth and fifth toes, for I felt the sting and jerk along the injured side, and it made me sick. I could bear only a light pressure there. When applied under the knee I felt the line of pain down the outside of the limb, and often the toes would jump. When the current passed down the inside of the limb it felt agreeable.

"My foot always felt badly on removing the shoe at night, and the limb above was very much swollen and glossy in appearance.

"The last of July, 1891, I took a short walk, without support, along the piazza. That night my foot pained up to the knee, and I was unable to touch it to the floor for more than a week. I was careful to take only a few steps at a time after that. At the end of a year this was all I could do.

"If I rubbed the foot, or put it down otherwise than just flat when I stepped, I was unable to use it afterward.

"I used crutches all the time at school, so as not to overtire my foot again; but in spite of all my care, I had that dreadful feeling on the side, and many days the line of pain up the limb.

"Often the foot had fits of shaking, which I could not control."

She continued thus helpless, using crutches for locomotion, and became thoroughly neurasthenic, until June, 1892, when I saw her in consultation with Dr. Romine. We agreed that the diagnosis was clearly the peculiar painful affection of the fourth metatarso-phalangeal articulation, and that the other symptoms were probably but those of reflex neuroses; also that excision of the joint offered the only means of relief. However, it was determined first to try the effect of an ointment composed of ichthyol and lanoline, together with fly blisters in the course of the affected nerves. These measures proving of no avail, in July I removed the joint. At the same time it was thought best to divide the tendo Achillis, as the heel had become much drawn up by contraction of the calf muscles, and did not relax even under anæsthesia.

From the moment of operation she never again experienced the old pain, and immediately began to gain flesh and strength under massage, hyper-nutrition, and rest in bed for three weeks. At the expiration of this period she was walking about unaided, and soon was as well and strong as ever. Union by first intention was secured, no weakness of the calf resulted, and the amount of retraction of the toe is about one-quarter of an inch. She now wears an ordinary shoe, and can make almost any exertion without discomfort.

CASE II.—N. C., aged thirty-two years, female, servant, native of Ireland. Family history, negative. Had always enjoyed good health until October, 1889,

WHAT $5.00 WILL BUY
WHEN WELL INVESTED.

1. The Times and Register for 1893, . . $3 00
   Croom's Minor Surgical Gynecology, 1 00
   Hadra's Lesions of Vagina, ... 1 00
   Hewson's Earth in Surgery, ... 1 00
   $6 00

2. The Times and Register for 1893, . . $3 00
   The Medical Register, Vols. I, II and III, bound in ½ Morocco, ... 3 00
   $6 00

3. The Times and Register for 1893, . $3 00
   The Medical World " . . 1 00
   The Medical Brief " . . 1 00
   The Medical Age " . . 1 00
   $6 00

4. The Times and Register for 1893, . . $3 00
   The Medical World, ... 1 00
   The Dietetic Gazette, ... 1 00
   Inter-Journal of Surgery, ... 1 00
   $6 00

5. The Times and Register for 1893, . . $3 00
   Any $2.00 journal published, ... 2 00
   Any $1.00 journal published, ... 1 00
   $6 00

6. The Times and Register for 1893, . . $3 00
   The Medical World Visiting List and Ledger, ... 1 00
   The Physician as a Business Man, (*Dr. J. J. Taylor*), ... 1 00
   Outline of Treatment by Dosimetric Granules, (*Dr. Waugh*), ... 50
   Chart of Skin Diseases, ... 50
   $6 00

7. The Times and Register for 1893, . . $3 00
   The T. & R. Hypodermic Syringe 1 50
   Outlines of Dosimetry, (*Waugh*), . . 50
   Case of 12 Dosimetric Remedies, . . 1 00
   $6 00

8. The Times and Register for 1893, . . $3 00
   Official Formulæ of American Hospitals, ... 1 00
   Physician as a Business Man, ... 1 00
   Outlines of Dosimetry, ... 50
   Chart of Skin Diseases, ... 50
   $6 00

9. Send us an order for $10.00 worth of books, journals, instruments, or any goods advertised in the TIMES AND REGISTER, and we will send the Journal one year free of charge.

10. Send us a club of ten subscribers, with $30.00 cash, and we will send you our T. & R. Physician's Watch; American movement, stem winder and setter, sweep second-hand, nickel case.
    Regular price, ... $9 00

☞Subscriptions to any journals in these offers must be new ones, except for the Medical World.

☞Cash must accompany the order in every case.

Subscription Manager, TIMES AND REGISTER:

1725 Arch Street, Philadelphia, Pa.

Enclosed find $.....for which send me TIMES AND REGISTER for 1893.

Special Offer No.....

Address,.....

P. O.,.....

Date,..... State,.....

when she tripped in going down stairs, and brought her left foot down violently in saving herself. Instantly she experienced an intense cutting pain in the region of the base of the fourth toe. The dorsum of the foot became black and blue, while the whole limb was affected with a dull burning pain. For several days she wore a slipper; then the discoloration gradually disappeared and pain became more endurable. But she had to cut every shoe that was worn, to prevent pressure upon this painful area. This painful sensation gradually extended from the original location up the front of the tibia, and became very severe in that situation. This misled a prominent surgeon to diagnose periostitis of the tibia, and cut down upon and scrape the bone. She remained in the hospital eight weeks, and was discharged unimproved. In February, 1891, another hospital surgeon cut down upon and chiseled away a portion of the tibia. Again no improvement followed.

Early in 1892 the patient entered the Polyclinic Hospital, willing to submit to anything to obtain relief. At this time she was almost helpless, exceedingly neurasthenic, and had lost much flesh. The scars of the previous operations were very evident. The entire leg was blue and cold and somewhat atrophied, but beyond this nothing was evident except that the fourth metatarsal phalangeal joint and its surroundings were exquisitely sensitive to motion or pressure. From this point the pain was reflected up through the entire sciatic distribution. She was put to bed and upon a milk diet for four weeks, while local counter-irritants and absorbents were applied, all to but little effect; the old pains and her general nervous condition persisted. I then excised the affected joint, and was amazed at her rapid progress to subsequent cure. Primary union was secured, and in three weeks she was walking about and entirely free from pain. Since then she has entirely recovered her former health and strength.

CASE III.—Mrs. E., aged thirty-five years, well-to-do farmer's wife, seen in consultation with Dr. George L. Romine. Family history good. She is of neurotic temperament, and faints easily. During last ten years she has been subject to attacks of neuralgia, affecting the left forearm. Three years ago she was seized with neuralgia, affecting the second and third fingers of the left hand. There was tenderness in the metacarpal region, whence pains were reflected up the forearm and arm, producing complete disability of the member. The parts were very painful to the touch, and slightly swollen. This condition persisted for four months, and then gradually disappeared. From this time until June, 1892, she remained well, when a marked attack of metatarsal neuralgia, affecting the fourth toe, supervened. This apparently did not follow an injury. The pain became continuous, and resisted all efforts for its relief, except when she laid down, when it would diminish or entirely disappeared. When I saw her, at the end of October, she had become bed-ridden, almost helpless, and exceedingly nervous, but nothing of disease was evident in the foot except the violent, unbearable pain that was invariably produced at the fourth metatarso-phalangeal articulation, upon the slightest pressing together or rolling upon each other of the outer metatarsal bones. At this time, even the weight of a stocking could not be tolerated upon the foot. The pain extended into the peroneal and sciatic nerves. She had lost fifty pounds in four months. The calf on affected side measured one and a half inches less than its fellow.

The affected joint was excised, primary union secured, and she steadily regained her usual health. Pain has disappeared, and she can walk with comfort.

A maternal aunt of Mrs. E. injured her foot eight years ago, and suffered in much the same manner as did the niece. She has never been able to secure relief, and to-day is scarce able to walk across a room without bringing on a severe attack of the pain.

A sister of the patient injured her foot ten years ago, and was then confined to her room for twelve months, because pain developed whenever the member was placed upon the ground. For five years she was unable to walk upon the street, while at the present time she cannot walk far without originating an attack of metatarsalgia, and has to be extremely cautious in walking over uneven surfaces.

CASE IV.—Mrs. S. C., aged forty-five

years, a missionary residing in Japan. She writes:

"When out walking in the city of Tokio, Japan, in the summer of 1888, and wearing a new pair of high-heeled shoes, I felt first a slight pain, which soon increased to severity, in my right foot in the region of the fourth metatarso-phalangeal articulation. The pain became so intense that I could walk no further. These paroxysms of pain continued to return with the slightest aggravating cause, the disease gradually becoming worse, so that for two years past, when at home, I have seldom had a shoe on my foot, and was not able to bear the loosest shoe while riding in a carriage, being almost always compelled to remove it after entering. When suffering the most intense pain it was accompanied with a general nervousness of my whole system. Upon removing my shoe all pain and nervousness soon ceased."

I removed the affected joint in May, 1892. In three weeks the patient was able to walk about with great freedom in ordinary shoes, and has since remained free of pain.

CASE V.—Mrs. R. T., aged thirty-two years, Canadian, housekeeper. Has suffered for five years from well marked metatarso-phalangeal neuralgia, involving fourth toe of left foot. No assignable cause. Attacks have been growing more frequent and severe progressively until she became almost invalided. Was compelled to remove shoe regardless of surroundings instantly upon supervention of the attack.

In December, 1892, I amputated the fourth toe together with the corresponding metatarsal head. In three weeks she was walking about as well as ever and has been entirely relieved of all discomfort.

CASE VI.—Lizzie T., a Russian, single, aged twenty-two years; mill hand. This woman works the treadle of a machine with right foot. Two years ago began having pain radiating from fourth toe. The frequency and severity of these attacks—necessitating removal of shoe—have increased steadily until she was entirely unable to work and had difficulty in walking.

In January, 1893, she entered the Polyclinic Hospital, and my resident, Dr. M. W. White, excised the affected joint under my supervision. Primary union occurred, and the cure has been complete.

Morton[1] gives the following graphic description of a case of metatarsalgia, written by a medical friend who had been a sufferer from the more severe form of the disease:

"I have suffered intensely at intervals from this affection for many years, and in all this time have never found medical man or layman who understood what I meant when I complained of it or alluded to it. It has been pronounced by surgeons who have examined my foot to be a subluxation or a malformation of the articular surface of the first phalanx of the fourth toe, where it articulates with the fourth metatarsal bone the concavity not being sufficiently concave. This I have long been convinced is an error.

"My own sensations have convinced me that the pain is caused by pressure upon a nerve, but what pressed upon the nerve I was unable to tell. The immediate necessity of removing the boot and the relief afforded by manipulating the foot in a manner learned by experience pointed to a dislocation; but the reduction of the displacement was never sufficiently sudden and marked to confirm the belief that there had been a dislocation.

"Now, after living for more than half a century, practiced my profession for over thirty years, and suffered half my life with an affection not understood and ranked with a disease so trifling as a corn, I find myself enlightened and the mystery cleared up by your valuable paper on the subject.

"The first paroxysm occurred in my boyhood, and was produced by tight lacing of skate straps. On unbuckling the straps, the 'cramp,' as I called it, was at first soon relieved and thought nothing of; but a continuance of this system of squeezing by tight straps and tight boots, and riding for hours on horseback with the flexors of the leg and foot in violent action and the toes turned in, the attacks became more frequent, more painful, and the abnormal condition of the parts became chronic. These were in my case undoubtedly the causes pre-disposing. The causes determining the accession of a

[1] Loc. cit.

paroxysm are the wearing of a badly fitting boot, especially if the sole be narrow; a long and fatiguing walk, particularly on a hot day over a hot pavement; a long ride on horseback; a wet boot sticking to the sock; a wet sock sticking to the toes; long-continued flexion of the knee-joint, as in a railroad car, carriage, or lecture-room; treading on an uneven surface, as a cobblestone pavement; and, should the nervous system be depressed from any cause, these exciting causes will act more powerfully.

"The symptoms of an attack in my case are most intense pain, 'cutting to the heart,' sickening, a feeling that it is unendurable, faintness, cold sweat, total incapacity for the time of directing the mind or will to any other subject, a horrible increase of torture on the use of the boot-jack; and all this with no redness, no swelling, no abrasion of the skin, no callosity, no visible displacement of bones, at least after removal of the boot.

"The suddenness of the attack is noteworthy. I have been obliged to drop everything and remove my boot, sometimes in company, sometimes in my carriage. I have even been obliged to sit down on the curbstone and remove the boot. I have dismounted from my horse and sent home for slippers before I could proceed. I have tied my horse to a tree and lain on the ground, unable to ride farther.

"I have spoken of a tight boot, and of removing the boot, but I have had tight boots which were great favorites, because they would not 'let my toe out of joint.'

"The remedies from which I have obtained relief are removal of the boot and then manipulating the toes—straightening them out. When inconvenient to take off the boot. I have found that grasping the foot tightly round the metatarsal region will answer; and I have sometimes worn a circlet of India rubber band, binding the foot round the instep. Putting on a dry boot and dry stocking is of great benefit, and the boot should be well sprinkled with powdered soapstone before putting it on. Frequently an attack has been relieved completely without other means than rest and a cup of strong tea."

Morton also reports the following from another medical friend:

"For several years previous to 1854 I had been subject to occasional dislocations of a relaxed joint in the fourth toe of my right foot. They had always occurred in walking, and the symptoms were perfectly distinct; the reduction, which was usually effected without difficulty, by simply 'working' the toe, was equally unmistakable.

"In the summer of that year I was climbing a mountain, when the joint became displaced; and, as it would speedily have slipped out again if reduced, I allowed it to remain luxated until I had finished the ascent and returned to the base, when the pain was so great as to make it necessary for me to ride home. After several hours of suffering, the joint gradually resumed its normal state.

"Since that time I do not remember that the luxation has ever taken place; but I have had many attacks of neuralgic pain in the part, coming on generally after exercise, but sometimes after sitting in one position, as in my carriage. Often exercise does not induce it. Heat, as from the pavements or the sand in summer, is a much more frequent cause. It begins gradually, and sometimes wears away in the same manner, but sometimes vanishes suddenly, as if by magic, without the use of any means of relief. The pressure of a boot always aggravates it; but it has attacked me while in bed at night. Diversion of the mind will often allay it, but it sometimes comes on again afterward with far greater severity.

"In 1869. while spending most of the summer at Atlantic City, I suffered more from this trouble than ever before or since. It would then often come on at night, after a day in town; and once or twice the attacks lasted more than twenty-four hours. So great was the annoyance from it, that I proposed amputation of the toe to a surgical friend, but he advised me against it. Since then it has been much less troublesome, though I have sometimes had it more or less every day for a week.

"Deep pressure over the metatarsophalangeal joint is painful, but does not bring on an attack unless long continued. Cold has given me more effectual relief than any other remedy I have tried."

The three following cases are quoted from the same source:

"In March, 1873, I was asked to see Miss H. S , aged twenty-six years, who while in Europe four years before, had injured her right foot by stepping upon a small stone. She said that she had at once experienced intense pain, which was soon followed by slight swelling and redness. From the date of the injury localized pain in the foot continued, especially while wearing a shoe. The pain was referred to the head of the fourth metatarsal bone. There was constant distress in the part, often of a sickening character. After wearing a shoe, pain came on with great intensity. At such times the shoe had to be instantly removed, the least delay causing a paroxysm of great suffering. The boot or shoe had to be removed so often that a slipper was substituted. A marked lameness was induced by the patient's endeavor to spare the foot in walking. The pain was confined to the joint of the fourth metatarsal bone with the base of the associated phalanx. Pressure in this region, or rolling the fourth and fifth toes upon each other, caused violent pain, which extended up the limb. It was severe when pressure was made upon the base of the first phalanx of the fourth toe, which could be prominently felt between the third and fifth toes."

"Dr. M. W. Alison, of Hagerstown, Maryland, called on me in the spring of 1875, seeking relief from neuralgia in his right foot, which had existed for years, and was gradually getting worse, and stated that he was willing and ready to submit even to amputation of the leg. He gave the following history:

"About six years ago I experienced an unpleasant, painful sensation in my right foot, which possibly originated in a strain: the pain was first observed in the fourth metatarso-phalangeal region; in the course of a fortnight it was followed by most violent pain, which was simply unbearable and so severe that it terminated in a convulsion. A painful condition of the parts followed, and with the least provocation (wearing a shoe or boot), sometimes without known cause, paroxysms of intense pain returned at various intervals, lasting from one to forty-eight hours. The pain, with one or two exceptions, has been confined entirely to the section of the foot indicated. My suffering has been beyond all comprehension; very often I have been compelled to jump from my buggy or stop while walking, remove my boot, which has always been of ample size, apply ligatures to the limb or foot, use hypodermic injections of morphia, frictions, or call upon some one to assist me by standing on the foot. This affliction has been the burden of my life, and this burden has been increased after consulting many eminent medical men, who gave me no satisfaction as to the nature of the disease, nor even suggested a hope of relief. My health otherwise has been uniformly good. I am satisfied the cases you have had are similar to my own, save in the intensity of my sufferings, and I shall gladly submit to the operation you have suggested."

Mrs. C. H. K., of this city, a lady fifty years of age, gave me the following history: "'The queer feeling,' I have been accustomed to call it, which has been in my left foot for thirty years, is a painful condition. The pain is in and about the joint of the fourth toe, with occasional attacks of intense suffering, when the pain extends to the knee, and, if my shoe is not instantly removed when the attack comes, the pain reaches the hip. It does not matter whether I wear a large or a small shoe, as I have never worn a tight one, but it seems that the least pressure will produce the same result. Often my sufferings have been exceedingly acute, and come on without any warning. Once I was taken while walking in the street, and the agony was so great that I was compelled to rest on a stoop, remove my shoe, and walk some distance in my stocking alone, the pain running in a straight line to the hip joint. In September, 1868, while at the Academy of Music, I had an unusually severe attack, and, not removing my shoe as quick as I should have done, was obliged to walk to my carriage without the shoe, and suffered intensely for three hours. My eldest sister has been similarly affected still longer than myself, but in her right foot, same toe and joint. She has several times given up wearing shoes, but the attacks continued."

Charles K. Mills,[1] in a lecture upon

[1] Journal Nervous and Mental Diseases, vol. xv. p. 4.

"Pain in the Feet," relates the history of a typical case that was entirely relieved by the operation of Morton. A woman, in jumping upon rocks twisted her foot. The foot apparently was not injured, and she was soon about as usual. During the next two years, at intervals of from two to eight weeks, a peculiar pain in the foot would develop that would last two or three days. Two years later she injured the foot again in the same manner. After this the pain was seldom absent more than a few days, and each recurring attack was of increased violence. Again, two years later, the pain became almost constant. The pain was a dull, heavy, sickening ache, from the foot to the hip, and with a sharp pain through the foot. At times the ache would be limited to the foot, but the sharp pain was there constantly. Arising in the morning, the patient could not put her weight upon the foot until she had taken hold of it suddenly from the top and pressed it hard together, and held it in both hands with all her strength for some minutes. After exhausting every known local and general remedy, the fourth metatarso-phalangeal articulation was excised. The patient subsequently slowly became free of every vestige of the former pain, and was entirely restored to health.

Poullosson[1] describes an instance where a medical man, twenty-nine years of age, had suffered from this affection for some years. It gave no trouble when the foot was at rest and without a shoe, but was usually brought on by wearing boots and walking a good deal. It was much more likely to occur when going down than in going up hill. The pain came on suddenly, a feeling of something having given way in the feet accompanying the onset, together with a kind of grating sensation. After this the patient walked lame, for all pressure of the anterior portion of the sole of the foot to the ground was painful. If walking was persisted in the pain increased, till in a few moments it attained its maximum, rendering all further attempts at locomotion impossible.

Edmund Roughton[2] has reported the following case:

"A medical man, aged thirty-three years, complained that for eighteen months he had suffered from attacks of burning pain in the forepart of the sole of the left foot. The pain occurred several times a week, and was usually brought on by prolonged standing or by walking any considerable distance, and was so severe as sometimes to cause him to remove his boot and grasp the sole of his foot with his hand. On examining the foot, I found that the traverse arch formed by the heads of the metatarsal bones had sunk, so that a distinct convexity replaced the concavity normally found in this situation.

"In this case the patient had increased considerably in weight during the period of development of the symptoms, and his transverse metatarsal ligament had presumably been unequal to the increased strain."

E. H. Bradford[1] has reported a series of thirteen cases, none of which, however, were severe enough to demand operation. In these the symptoms were not in a single instance the result of traumatism, nor was any evidence of dislocation or other local change observable. These patients were all in enjoyment of excellent health, and in none were there evidences of gout or rheumatism.

TREATMENT.—The less severe forms of metatarsalgia may often be prevented from running into the more serious types by proper shoe construction or by wearing a narrow flannel bandage about the ball of the foot. Morton, whose suggestion the latter is, directs that the bandage be two inches wide, and long enough to wrap neatly and firmly about the metatarsus some five or six times. The end is pinned, and the stocking drawn over. This has given marked relief in a number of cases.

The shoes for persons suffering from this disease should be firm-soled, make no lateral pressure upon the metatarsus, yet have the instep tight enough to prevent the foot slipping forward. The great object of the shoemaker should be to prevent pressure, either lateral or antero-posterior, upon the metatarsal arch, and also to prevent any rolling motion of the outer metatarsal heads upon their fellows. A broad, rigid sole would appear

[1] Loc. cit.

[2] London Lancet, March 16, 1889, p. 553.

[1] Loc. cit.

to best fulfil this last indication. Bradford proposes the use of digitated stockings in these cases, with a view of keeping the toes further apart. As the foot spreads when the weight of the body is thrown upon the member, it is apparent that the individual should be standing when the measurements for shoes are made, as has been advised by Grün.

The use of various pads in the shoe and about the toes, also such measures as the hollowing out of cavities in the sole opposite one or more of the metatarsal heads have been tried, but invariably found unsatisfactory. A variety of the affection calling for so much attention to secure comfort would clearly demand the certain cure to be afforded by operation.

In persons where a rheumatic or gouty diathesis may be suspected appropriate remedies for those disorders should be given a thorough trial before operative measures are resorted to. But when the condition is entirely of local mechanical origin the employment of general or local medicinal agents is useless. On the other hand prolonged rest in bed will benefit all cases more or less, and occasionally secure relief for long periods, or even permanently cure the milder phases of the disorder.

Operative treatment should be limited to excision of the metatarso-phalangeal articulation from which the neuralgia radiates, or, perhaps, to amputation of the corresponding toe above the joint, as have been recommended by Morton and endorsed by other writers. These procedures are among the safest and simplest in surgery. Of amputation of the toe, together with its metatarsal head, nothing more need be said than that by this measure the possibility of subsequent trouble arising from a tendency of the toe to retract and ride above or below its fellows is excluded. However, this heretofore occasionally troublesome sequel can be avoided by dividing the extensor and flexor tendons while excising the joint, as I have done in five cases with most satisfactory results.

Operation.—Primary union should be aimed at. To secure this the foot must be scrupulously cleansed. The nails should be trimmed short. Then soap, water, and nail-brush should be liberally applied. Following this, the member should be soaked in two and a half per cent. carbolic acid solution, and finally dressed in a moist carbolic dressing of the same strength until the surgeon is about to operate. Where the foot is especially foul it is my custom to finally dip it into a saturated solution of permanganate of potash until colored to a dark mahogany hue, and then transfer it to a saturated solution of oxalic acid until decolorized, before applying the temporary dressing. When the surgeon is about to operate the temporary dressing is removed and the parts given a final douche with 1 : 1000 sublimate solution.

A vertical incision from one and a half to two inches long is made, beginning over the proximal inter-phalangeal joint and extending upward in the centre line of the toe[1]. The extensor tendon now comes into view, and is divided. Another stroke of the knife carries the incision through its entire length down to the bone. The handle of the knife or other moderately blunt implement is then employed to separate the tissues from the upper and lateral portions of the joint. Next the blades of a powerful sharp pointed, narrow bladed, cutting pliers are pushed down on either side of the phalanx immediately below its base (hollow of the blades always towards the articulation), and this bone divided. The metatarsal bone is then similarly divided just above its head. The separated joint is now seized by bone forceps and dissected away from any remaining attachments. This done, the flexor tendons will be seen lying in the bottom of the wound, and should be picked up by forceps and divided with scissors. If hemhorrhage is severe and not controllable by moderate pressure of the parts, ligatures should be applied. I have never had occasion to apply a ligature in this operation, as the pressure of the dressing has always sufficed to control any oozing that might continue after the sutures had been applied. The wounded edges are next to be approximated—no drainage being required if asepsis has been maintained—by continuous or interrupted suture, as may be preferred. A gauze and cotton dressing is finally applied and

[1]The joint has also been excised through an incision in the sole, but the method is objectionable on many grounds.

bound firmly on with a wet gauze roller, care being observed to place little pads of the gauze in such positions as will hold the toe in its proper position during healing.

The foot should be kept considerably elevated for the first two days, after which it may be brought to the level of the bed. I prefer my cases to remain in bed or on a couch until the fourth or fifth day, when they may be permitted to sit up with the foot resting on a chair. At the end of a week the sutures are removed; two or three days after which the patient is permitted to move cautiously around, while at the termination of three weeks all restraint may be removed and a firmly healed wound and permanent cure confidently expected. No special form of shoe or particular care of the foot is afterward required.

In case suppuration should arise in the wound, the sutures should be at once removed, the wound cavity washed out with full strength peroxide of hydrogen solution, then with $\frac{1}{1000}$ corrosive sublimate solution, and gently stuffed with iodoform gauze. All of which should be repeated every one or two days until the wound closes by granulation.

In addition to the references given in the text the following may be mentioned to complete the bibliography of the subject:

Gross: *System of Surgery*. .

Agnew's *Surgery*.

Erskine Mason: *Am. Journ. Med. Sci.* Oct., 1877.

Editorial, *N. Y. Med. Jour.*, Oct. 8, 1892, "Morton's Painful Affection of the Foot."

Roswell Park; *Med. News*, 1892; vol. ii, p. 406, "Morton's Affection of the Foot."

Meade C. Kemper: *Virginia Med. Monthly*, vol. viii, p. 522, "Case of Metatarsal Neuralgia."

1506 Locust Street.

DISCUSSION.

Dr. W. W. Keen: This affection has not seemed to me to be so frequent. I have seen only one case—this was a lady about going to Brazil. I operated five years ago on both feet. Since then she has been able to walk perfectly well and to dance.

Four years ago I had an attack which I thought might be the same. This attack interested me in connection with the diagnosis, because I had every symptom that Dr. Morton has described. The attack came on about the time of my summer holiday, and I was unable to walk without limping from the excessive pain. When the pain came on I was compelled to go to my room or sit down where I happened to be, and remove the shoe. I had a pair of shoes made with a thicker and wider sole and a little larger, but without relief. When I came home I was tempted to have the operation done. I, however, consulted my friend, Dr. J. C. Wilson, who suggested a gouty origin, and put me on appropriate treatment, and the pain disappeared, and I have been perfectly well ever since. I mention this in connection with the diagnosis, as here there was the pathognomonic sign of having to sit down and remove the shoe when the pain came on.

Dr. Thomas G. Morton: As early as 1870 my attention was first directed to this painful affection of the foot, and I then felt satisfied that I had a malady which had not previously been described. In the *American Journal of the Medical Sciences* for January, 1876, I published an account of this painful local affection, and subsequently reported a number of cases which I had successfully operated upon. Later, in various journals, the subject received attention until at present the disease is generally understood. In 1891 Dr. E. H. Bradford published an interesting account of a number of cases which had come under his care, and more recently numerous authors have given their experience.

A medical man from Hagerstown, Md., once called upon me and stated that he was seeking for relief from a neuralgia of the foot, which was so terrible that he was willing even to submit to amputation of the limb. The only relief he obtained was by injections of morphia. The operation was completly successful, and the doctor went to his home on the third day afterward, and has never had any pain since.

I have generally found the disease in one foot; but occasionally in both; and have been operated on both feet at the same sitting. Now and then I have amputated the toe instead of resecting the

the joint. The pain in many cases is slight, and only requires a proper shoe and a flannel bandage to keep the toes from rolling; in others nothing except an operation will suffice. In regard to shoes, a shoemaker of this city told me that one of his customers had more than fifty pairs, hoping in each new pair to have greater relief.

The question has been raised as to whether the painful nerve might not be excised instead of excising the joint of the toe. I apprehend there would be great difficulty in finding the nerve; and unless all the soft parts surrounding the joints were removed, some branches would remain; while if the pain is due, as I think it is; to the peculiar relation of the fourth joint as compared with the third and the fifth, no treatment except joint removal will answer.

A METHOD OF OPERATING ABOUT THE FACE BY WHICH BUT LITTLE BLOOD ENTERS THE MOUTH.[1]

By W. W. KEEN, M.D.

I WISH to call attention to a method of operating about the face which is not generally followed, and which may be new to some. It is particularly applicable to epithelioma about the lip, of which I have had two severe cases in a comparatively short time. In one there was extensive epithelioma requiring removal of a portion of the upper lip, the lower lip and the cheek. The other case was one of epithelioma of the cheek, and is also of interest from the fact that the patient had originally been operated on forty years ago by Dr. George R. Morehouse. A microscopic examination was made at that time, and the tumor was said not to be epithelioma. When I saw the man the disease extended from the angle of the mouth back to the molar teeth, and from one jaw to the other. It was on the inside of the mouth exclusively, except at the angle where the entire thickness was involved. The external layer of the cheek seemed to be entirely free. In operating I placed the patient on a flat table with the operated side turned a little down and cut through the skin down to the mucous membrane, but not through the latter. I then secured all the vessels *before* opening into the mouth. In this way I prevented blood from entering the mouth and also lessened the total loss of blood. In this case Stenson's duct was involved in the operation. I found the duct and stitched it to the mucous membrane of the upper jaw, and there has not been the slightest trouble from fistula. The incision was a very wide V, the linear incision corresponding to the apex of the V being on the cheek, and the widest part is the base of the V inside the mouth. I am sure that those of you who try this method will find it satisfactory.

[1] Read before the Philadelphia Academy of Surgery, at the meeting of March 6, 1893, the President, Dr. William Hunt, in the chair.

A CASE OF APPENDICITIS.[1]

By WILLIAM HUNT, M. D.

THIS specimen was removed from a young girl who presented every sign of good health, but had been sent to the Pennsylvania Hospital by a physician outside, who had diagnosed possible stone in the bladder from the general symptoms. She was examined by the residents on admission, and they thought that they felt a stone. I saw the patient but once and I examined her for stone, but did not find one. I decided to let her rest and to repeat the examination under ether the following day. At three o'clock she was taken with severe pain in the lower part of the abdomen. At eight o'clock she seemed to be doing well, but at eleven o'clock there was a return of the symptoms, and she died in two or three hours.

The coroner's physician was sent for and made an examination, and the death was ascribed to "idiopathic peritonitis." I and Dr. Morton were telephoned to this effect and immediately sent back word to make further examination. It was then found that the appendix was large and swollen and had a large perforation in it. The abdomen was full of pus. It was afterward learned that she had been ailing for two weeks, but there were no symptoms referable to the appendix.

[1] Read before the Philadelphia Academy of Surgery, at the meeting of March 6, 1893, the President, Dr. William Hunt, in the chair.

DISCUSSION.

Dr. Thomas G. Morton: I have seen more than one case where it was impossible to make a diagnosis: the most remarkable instance was the following: In March, 1890, Dr. Da Costa and I were summoned to Trenton, N.J., to see a patient with Dr. Phillips, of that city. The patient was about forty-two years of age; he had been apparently in excellent health three days before; he became obstinately constipated and had nausea and had vomited; little or no abdominal pain and no swelling, a normal temperature, no chills, and pulse showed no acceleration. The bowel simply refused to respond to cathartics. Inquiry showed that there had been no former attack of pain in the appendix region. Calomel and fractional doses of podophyllin were given.

The following day there was a subnormal temperature and great prostration, but no evidence of local or general peritonitis, and the diagnosis could not be cleared up. Median exploratory abdominal section showed a foul abscess in the right iliac fossa; an inflamed gangrenous appendix; the ileum was covered with lymph, and for several inches showed structural change. Two days subsequently the patient died.

In reviewing this case I can see no way by which the nature of the case could have been determined; it seems hardly possible that perforative appendicitis and intestinal gangrene should not present at least some positive symptoms, yet in this instance, none such were present.

Dr. W. Joseph Hearn: I had a case at the Jefferson Hospital where the man had walked to the hospital the evening before, with a temperature of 101°. Dr. Keen saw him the next day, and we agreed that it was a case of appendicitis. Operation was done and a quart of pus evacuated. The man died subsequently.

Dr. T. S. K. Morton: In this connection, as illustrating how patients with very serious disease are able to perform almost incredible exertions, I may mention a case of strangulated hernia that walked to the Polyclinic Hospital to-day—quite a long distance—after his physician had made strong taxis for half an hour. The strangulation had existed five days, and when I operated, the gut was found gangrenous.

News and Miscellany.

An Austrian doctor says he practiced four years in the country and earned $250 a year.

St. Andrew's University, Edinburgh, has opened its doors to women, who can now obtain the degrees in medicine.

Parke, Davis & Co., supply the animal extracts now being employed in the treatment of myxœdema, and other affections.

Dr. S. T. Armstrong has been made Secretary of the Section in Marine Hygine and Quarantine, of the Pan-American.

Dr. Gihon is announced as the coming Surgeon-General U. S. Navy; the present incumbent is soon to retire on account of age.

Paris doctors call attention to the urethritis of bicyclists.

We have had several cases under treatment, and have not observed any difference from other gonorrhœas.

The Scotch student in Moral Philosophy must have been hard up for an example of special Providence, when he instanced the uptilted nose of the bull dog, enabling him to breathe without losing his grip.

Our latest advices from Harrisburg are to the effect that the anti-vivisectionist bill will not become a law. The bill forbidding the exhibition of freaks is in the same state of innocuous desuetude, and the milk bill is dead.

Dr. Egbert Guerency has been forced off the staff of the N. Y. City Homœpathic Hospital, by his Hahnemannian confrères. This is the result of Dr. Guerency's efforts to induce the alleged homœopathists to come out under their true colors, to do away with sectarian medicine and put themselves on the broad platform of unrestricted therapy. Dr. Guerency can well afford to bide his time, certain that the next generation will vindicate him.

The Times and Register.

A Weekly Journal of Medicine and Surgery.

WILLIAM F. WAUGH, A. M., M. D.,
MANAGING EDITOR.

Published by the MEDICAL PRESS CO., Limited.
Address all communications to
1725 Arch Street, Phila.

PHILADELPHIA, MAY 6, 1893.

[1]THE TREATMENT OF PERITYPHLITIS.

IN a late French exchange we have read an interesting discussion which has recently taken place, at the latest reunion of the Central Association of Swiss Physicians and Surgeons, the substance of which we here submit.

Kocher maintains that the greater number of cases of peritonitis are caused by perityphlitis, the symptoms being those of peritonitis, or a local perityphlitis The evolution of the malady is dominated by a series of circumstances over which the physician, to a certain degree, is master; such as the extent of intestinal repletion, repose of the body, etc. Kocher attaches more importance to complete repose of the intestine than to operative intervention. To effect this a restricted, absolute diet should be recommended with the administration of opium. In other words, our course should be prophylactic.

He says, however, that when we are assured of the presence of pus, it should be evacuated to avoid the danger of absorption of the toxines. He operated on fifty of these cases, in which purulent matter had formed, losing but two. There are cases, he says, in which, even though an exudation of pus is present, they may end happily by resorption of it, when in small quantities, or by making its way out through the intestinal canal. This author condemns the exploratory puncture, as it leaves the bowel and serous membrane exposed to danger of trauma. He adds that an operation is always called for, in chronic and in relapsing cases of perityphlitis.

M. Huguenin has observed 90 cases of perityphlitis. He concludes, that for every two cases we meet, but one will justify radical measures. He places great reliance on opium, and says that with this agent, combined with judicious and skillful operation, the mortality will be reduced from ten to one per hundred.

Kroenlein admits the difficulty of a rigorous definition in these cases, because all do not start in the appendix. Besides that, as many of those inflammatory tumors contain only some serum, or fibro-serous exudate, in a large number it will undergo spontaneous resolution; hence, thus it is only when the fluid is purulent and the appendix is perforated should an operation be undertaken. Kroenlein is not a partisan of preventive surgical operations for this condition; and condemns its performance during the acute stages, when the appendix is not yet perforated.

Wys advises absolute repose, ample opium, no purgatives. He is opposed to hasty intervention. He denies that even the presence of pus should always demand incision; and says that the eventual resorption of purulent matter is a possible eventuality.

M. Ribbert gave the anatomo-pathological researches in four hundred cases of perityphlitis. Fæcal concretions he found once in ten times. In but one was the appendix perforated by one of those.

[1] Revue Generale de Medicine de Chirurgie et d' Obstetrique. 12th April, '93.

Resorption of the liquid exudatives, he says, is certainly possible. Solid exudatives, he alleges, in time, assimilate with the connective tissues. Finally M. Sahli insists that the greater part of these cases recover without operation, when they are submitted to appropriate treatment. In his experience, the exploratory puncture, when it is made over the seat of the tumor, is inoffensive.

Annotations.

AN OLD TRICK REPEATED.

THE Homœopathic County Society has asked leave of the Board of Health to investigate its archives of contagious diseases to make some capital out of the relative mortality. When members of the homœopathic school habitually report every case of sore throat as diphtheria, it is easy enough to cipher out a very low mortality; and that this is done is too well-known to require demonstration.

Some comment has been occasioned by the undertaker in the Board appearing as a champion of the homœopathists; but it is presumed that Colonel Good is politician enough to know who are his friends.

THE CLERGY AND PRACTICAL HYGIENE.

THE clergy of Philadelphia have organized to aid in securing a better condition for the city. Pure water, thorough street cleaning and the proper removal of garbage, are among the objects sought. Rev. Dr. McConnell said that nothing was to be expected from Councils, controlled by mercenary corporations. The Mayor was the one man responsible for the state of affairs. He suggested that 150 of the clergy wait on the Mayor and urge upon him the importance of exercising his full powers.

It is a hopeful sign of the times, when the clergy are found advocating practical hygiene, and we hope that members of our own profession will be as diligent in arousing the community to a sense of its danger, and its duties.

RAGS.

DR. PAUL GIBIER (*Ther. Review*) was asked to examine some "disinfected" old German rags, imported into New York from Bremen. The microscope showed among other things, blood cells and bacteria. Cultivation developed colonies of eleven different micro-organisms, found alive, on these "disinfected" rags! Among them were the bacilli of tuberculosis, staphylococcus albus and a streptococcus resembling that of erysipelas and pathogenic for rabbits. The living germs in the thirty grains of rags were not less in number than 200,000,000 to 400,000,000. Dr. Gibier concluded that the rags came from a hospital.

A reference to our files will show that we have most earnestly protested against the importation of foreign rags during epidemic prevalence in Europe, and warned against the trust in disinfection.

Society Notes.

At the Clinical Society of Maryland, March 3, Dr. J. H. Branham read a paper on

EXCISION OF THE PILE-BEARING MEMBRANE FOR HEMORRHOIDS (WHITEHEAD'S OPERATION.)

An advance in the treatment of hemorrhoids was undoubtedly made in 1886 when Whitehead reported his method of total excision of the pile-bearing membrane to the British Medical Society. At that time he had operated on three hundred cases with uniformly good results. The cases which should be submitted to this operation are those severe ones in which the disease is extensive, involving the whole circumference of the mucous membrane lining the lower part of the rectum. Dr. Branham has employed the operation for over three years and while the number of his cases is not large, the results have been very satisfactory and he strongly favors the method although it has been condemned by nearly all the prominent rectal specialists. The different steps in the operation were described. A 1-2000 solution of bichloride of mercury is the antiseptic used. The wound is closed by a continuous cat-gut

suture carried through the skin and the tissues at the bottom of the wound and through the severed mucous membrane. Dr. Branham's cases number fifteen. In no instance has the hemorrhage been severe and in none has there been secondary hemorrhage. No abscess or septic infection occurred in these cases. Union was primary in most of the cases, but a slight suppuration occurred in several instances. The advantages of this operation over other operations, especially the ligature and the clamp and cautery, are, that the ligature leaves the wound open to granulate and is more liable to infection and secondary hemorrhage, is less thorough and is apt to be followed by a return. The clamp and cautery, while leaving the wound at first aseptic, is followed by a large granulation and consequently is more liable to cause contraction with symptoms of stricture.

Dr. S. T. Earle did not think that as a rule rectal specialists condemned the operation. They simply did not recommend it in all cases of hemorrhoids. They nearly all speak of it in high terms in cases for which it is especially adapted. Dr. Earle had done the operation repeatedly, but only finds it necessary in about one out of six cases. He limits his cases to those where there is a varicose condition of the systemic veins together with internal hemorrhoids; in this condition no other operation can take its place. He has had in one case, where there was considerable prolapse of the mucous membrane together with the hemorrhoids, a return of the prolapse in one portion after excision by Whitehead's method. This prolaspe was excised and there was no further trouble. Dr. Earle has never met with any hemorrhage to speak of in this operation and never had any secondary hemorrhage to occur. This operation is unnecessary in the majority of cases. Where there are distinct and separate internal hemorrhoids it is much easier to excise them and the results are just as good.

Dr. Hunter Robb took exception to the use of bichloride of mercury for disinfecting the rectal mucous membrane, and to the use of cat-gut as a suture material. From the uniformly fatal results produced by corrosive sublimate in irrigating the peritoneal cavity of dogs with solutions of 1-60,000, he is inclined now to hesitate before employing this agent on mucous, serous or incised surfaces. It has been proven that corrosive sublimate in solution even as weak as 1-60,000 will produce a superficial necrosis of the tissues, and it has also been shown that even in strengths of 1-2000 or 1-3000 the drug is not always germicidal in its action. It would not seem advisable therefore to use a substance that causes destruction of the tissues, when in addition there is no certainty that the micro-organisms will be killed. By producing a necrosis of the tissues the normal resistance of the part would be interferred with and any virulent bacteria that might originally have been present or those that came subsequently in contact with the wounded surface would be much more likely to give rise to an infection of the part. He said that he had repeatedly tried, with some modifications, Dr. Halsted's experiments of irrigating the peritoneal cavity of dogs with bichloride of mercury. He had used 700 c.c. of freshly made aqueous solution of corrosive sublimate in strengths of 1-40,000 and 1-60,000. Immediately after using one of these solutions the peritoneal cavity was irrigated with the same quantity of sterile warm water, and then sponged as dry as possible. In from twelve hours to four or five days the animals all died. The lesions found at the autopsy were those produced by the toxic effects of corrosive sublimate. They consisted of marked diphtheritic deposits on the intestinal mucous membrane with intense hyperaemia, particularly in the large intestine and rectum. Altough in some instances solutions of bichloride of mercury may be used in the peritoneal cavity without any unfavorable sequel, the results of these experiments with dilute solutions would necessarily lead one to be most careful, since the susceptibility of a given individual to its evil effects can never be predicted.

As to the use of cat-gut, it seemed to him that it has been clearly proven by the experiments made by Dr. Ghrisky and himself that this substance is a most favorable suture material for micro-organismal invasion, and besides it is impossible to be absolutely sure of sterilizing a cat-gut sufficiently strong to be of use. In their experience silk-worm gut had

proven to be the suture material most resistant to bacterial growth, and it has the advantage that it can be easily rendered sterile.

Whitehead's operation for hemorrhoids is one that he thought it rarely necessary to employ. The operation that he performs is that carried out by Dr. Kelly. The apex of the hemorrhoid is held with a pair of bullet forceps or by a tenaculum, and an incision made through the superficial layers of tissue encircling its base. A double ligature is passed through the centre of the hemorrhoid at the base, and each ligature tied separately in the line of incision one anteriorly and one posteriorly. The portion of the tissues beyond the constriction is then cut off and the pedicle lightly cauterized. A simple, sterile protective dressing is applied. This method of operation has given very satisfactory results.

Dr J. W. Chambers thought that Dr. Branham's cases showed at least that good results can be obtained by Whitehead's operation. He usually does Smith's operation with clamp and cautery. The matter of putting on a ligature and then using a cautery, as described by Dr. Robb, is doing two operations instead of one. The clamp and cautery is unquestionably the best method in simple cases. As to washing out the rectum with bichloride solution that is hardly as dangerous as Dr. Robb has suggested. It is hard to draw comparisons between the effects of flushing out the peritoneal cavity of a dog and the irrigation of the rectum that has been subject to severe congestions. Of course it is impossible to make the rectum or the mouth perfectly aseptic but there is something about these two localities that makes their tissues unusually resistant to infection and wounds in these regions do particularly well.

Dr. W. S. Gardner thought that there was something of a scare about bichloride poisoning. Leopold keeps his sponges in 1–10,000 bichloride and swabs out the abdominal cavity with the solution. During a Cæsarian section he has seen Leopold swab out the uterus and wipe off the outside of that organ with this solution and the patient did perfectly well. Dr. Gardner has a great many times washed out the dilated puerperal uterus with a solution of 1–4000 bichloride with no trouble resulting. Certainly the dilated uterus and vagina offer a very much larger surface for absorption than you can get in the most distended rectum.

Dr. Wm. E. Moseley thought that it was hardly proper to make comparisons between bichloride that is absorbed through the peritoneai membrane into the circulation and then produces lesions in the rectum and the effects due to irrigating the surface of the rectum. He does not use bichloride in the peritoneal cavity, but has seen it used repeatedly with no evil results. The method of transfixion as described by Dr. Robb was the oldest one that Dr. Moseley had ever seen or practised. It is a very good method, but not new.

Dr. Earle said that he did not hesitate to use bichloride in the rectum, but always takes the precaution to wash it out afterwards with sterilized water. He had once seen a diarrhœa after the use of bichloride. We cannot expect to make the rectum aseptic but should try to make it as nearly so as possible.

Dr. Branham named Matthews, Kelsey and Allingham as amongst those who condemned the Whitehead operation. As to the use of bichloride: Dr. Robb says that one-eighth of a grain will kill a dog. Human beings with syphilis take one-eighth of a grain three or four times a day without any evil results. The peritoneum is an absorbing membrane and if much bichloride solution is left in it death may result; but the lower portion of the rectum is lined with pavement epithelium and histologically does not differ from the skin, and there is probably no more likelihood of poisoning from bichloride in applying it to this tissue than in applying it to the skin. This portion of the rectum is an excreting and not an absorbing tissue. As to the use of cat-gut, there seems to be some extra dangers of infection from it. The disadvantage of silk is that it has to be removed and causes some irritation.

WM. T. WATSON, *Sec'y.*
1519 N. BROADWAY, BALTIMORE, MD.

In preparation: Special numbery devoted to obstetrics: infant foods: prevention of cholera: neurological: gynecological, etc.

Book Notes.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA, 3 dseries, Vol. XIV. Phila. Printed for the College, 1892.

Twenty-six papers are contained in the present volume. Last week we spoke of the bill forbidding the exhibition of "freaks" at the museum. Of the papers embraced in the volume before us, we find that several relate to rare cases exhibited at this place.

The Medical Digest.

FOR SYCOSIS.—

℞ Sulphuris, ...
Olei Cadini . . . . . aa ʒiv
Saponis Mollis, ...
Adipis . . . . . aa ʒj
Cretæ Præparatæ . . . . ʒiiss

To be brushed into the affected parts after the hair on and surrounding the affected part has been cut short, and the crusts and scabs removed.

SURGICAL TREATMENT OF NEURALGIA.—Surgical interference in rebellious neuralgia is still considered by many as illusory, yet several examples have been published of resection of the principle trunks of nerves attended with success. I practiced seven times the total ablation of the superior maxillary nerve in the following manner:—I tore away by the forceps the nerve as it came out of the large round foramen, by an incision made on a level with the lower end of the orbit and the maxillary sinus pierced with a gouge until Meckel's ganglion was brought to view as well as the large foramen. In my first cases, I removed the ganglion but later I found that it was not necessary to do this, I have also once or twice removed, besides the superior maxillary nerve, several other branches such as the nasal frontal, lachrymal, inferior dental, buccinator. In some inveterate cases of neuralgia of the fifth pair the resection of its three principal branches is required. In one notable instance I made the intercranial section of the root of the tri-facial beneath the superior sinus of the petrous bone, and removed Gasser's ganglion. The result was perfect; and I feel authorized in proposing for rebellious neuralgia of the rachidian nerves an operation analogous to the section of the fifth pair—intra-rachidian section of the corresponding posterior roots. I have at present in my ward a case of sciatica which I mean to treat in this manner.—Doyer, *Med. Press.*

News.

The *American Druggist* and the *Pharmaceutical Record* have consolidated, and present their readers with a fine large weekly journal devoted to pharmacy. "Fewer journals and better ones," is the need of the day.

Pennsylvanians visiting the World's Fair should go first to the Pennsylvania State Building. Here they should register, that all friends will be able to find them. The building contains reception, smoking, writing, reading, toilet, cloak, and parcel rooms, for both sexes; a post-office, bureau of information, etc. No fees are charged except for blacking shoes.